EW SE | Enterprise-Wide Systems Engineering

Spanning the **Government** and the **Globe**

DoD Chief Information Officer
[ASD(NII)/DoD CIO]

A Need for Common Ground in Information Sharing. When the Indian Ocean tsunami struck in late December 2004, laying waste to huge portions of South Asia with frightening speed, the Department of Defense (DoD) joined with organizations from around the world to offer aid. Lessons learned from the disaster showed that the success of this effort hinged on the ability of participants to share vital information. Most people, if they think about it at all, assume that DoD's role in information sharing stops with DoD warfighter applications. But the need to share trusted information applies to more than battlespaces. Natural disasters, terrorist attacks, chemical/biological accidents, and similar scenarios all demand ways for our government agencies to exchange information with short-term emergency partners.

The Office of the Secretary of Defense for Networks and Information Integration (OSD/NII) is leading the effort to transition existing and future information resources to a common global enterprise with end-to-end (E2E) interoperability, known as the Global Information Grid (GIG). Unlike the commercial Internet, the GIG is a variable-trust environment that determines the specific areas and information users have the right to see, based upon their approved level of access.

EW SE—Establishing the GIG Technical Foundation. The Enterprise-Wide Systems Engineering (EW SE) strategy establishes the policies and guidance needed to maintain a common foundation for the GIG throughout the federal enterprise. It encompasses all government agencies, not just those under the umbrella of DoD. By setting common interoperability and performance standards and providing oversight for rollout, adoption, and use, EW SE assures the GIG's integrity as a trusted resource able to support national security, business, humanitarian aid, intelligence, enterprise information environment, and warfighting operations.

EW SE Vision, Mission, and Strategy. Making timely, trusted information available when and where it is needed to those who need it most is the driving force behind EW SE's Vision, Mission, and Strategy.

Vision. To provide effective guidance and direction for the ongoing evolution of the GIG.

Mission. To provide the ASD(NII)/DoD CIO with EW SE methods and products which enable the GIG to comply with the E2E governing principles for interoperability and performance needed to support DoD business, intelligence, and warfighting operations across the government and around the globe.

Strategy. To field a GIG built on commercial Internet information technology (IT) supplied by the industrial base to the greatest extent possible. This involves:

▶ Defining essential enterprise-wide functions
▶ Establishing a GIG interoperability performance framework

▶ Capturing key enterprise governing principles for interoperability
▶ Working closely with commercial Internet IT industry and standards bodies to ensure DoD's understanding of available and anticipated commercial technologies that could be used to support the GIG
▶ Identifying areas that will require research and development (R&D) investment
▶ Providing technical input to the ASD(NII)/DoD CIO to support Acquisition, Technology, and Logistics joint portfolio management processes and investment decisions
▶ Jointly involving the user community and GIG development community through ongoing experimentation and rapidly developed pilot capabilities that invite informed user input
▶ Ensuring program compliance with the GIG technical foundation through ASD(NII)/DoD CIO oversight and influence over DoD budget and acquisition processes

The Need for EW SE. As in warfighting, natural disasters and other humanitarian aid responses require trusted ways to share critical information with partners via the GIG's Net-Centric Environment (NCE). EW SE was established to provide guidance for all aspects of the emerging GIG—including but not restricted to its technical foundation, decision maker support capabilities, program compliance management construct, and ongoing evolution. Processes, policies, and cultures must be reconsidered and standardized across the government to achieve a joint mindset that takes creative new approaches—including ways to quickly integrate non-U.S. partners in the event of an emergency. Technology must also be standardized across the NCE for the GIG to achieve the goal of Net-Centricity. Many technical options exist, necessitating the identification of the convergence points that are critical and establishing protocol for implementation. Involvement at this early stage is critical because it affects both overall enterprise success and individual stakeholder interests.

Ways to Get Involved. The EW SE organization evolved to address the information sharing needs of all members of the enterprise. In the coming months, EW SE will be inviting its stakeholders—you—to participate in meetings and conferences that address potential issues throughout the enterprise. Participation offers you the opportunity to identify specific requirements you would like to see covered in emerging GIG guidance—including ways to best transition your existing resources. Involvement at this early stage is critical because it affects both overall enterprise success and individual stakeholder interests. Other ways you can get involved with the EW SE effort include:

▶ Actively participating in the EW SE policy development process
▶ Attending GIG Net-Centric Information Document (NCID) meetings
▶ Engaging in one-on-one outreach with OSD/NII leadership to discuss the way ahead
▶ Extending invitations for NII leadership to speak to your staff, Program Managers, and systems engineers, either at your agency's offices or at professional conferences
▶ Showing support for EW SE efforts throughout your agency

Five Key Goals

DoD's EW SE strategy has identified five key goals that must be met to realize the future of the NCE:

1 Provide continuous oversight of the GIG's evolution.

EW SE provides technical input to the ASD(NII)/DoD CIO, who is responsible for developing and implementing the Net-Centric policies, oversight, guidance, architecture, and strategic approaches needed for DoD transformation. This input helps shape the GIG's governing principles of information assurance and interoperability not only between DoD agencies and the various service branches, but with coalition partners as well. These principles, combined with ongoing monitoring, establish and maintain consistency within the GIG at all levels.

2 Maintain an enterprise-wide technical foundation to build the GIG.

EW SE develops, evolves, and maintains the GIG's enterprise-wide technical foundation, to include defining and documenting E2E guidelines for performance, interoperability, security, network-enabling protocols, standards, and implementation conventions. Results of this work will guide DoD Program Managers in the ongoing development of improvements to the GIG.

3 Establish GIG enterprise-wide analysis capabilities.

EW SE assists the ASD(NII)/DoD CIO in establishing enterprise-wide analysis capabilities to support the evolution of the GIG's technical foundation described above. This enables the creation of quantifiable, repeatable assessments of solutions to provide E2E interoperability and performance.

4 Oversee GIG enterprise-wide experiments.

EW SE assists the ASD(NII)/DoD CIO in the development and conduct enterprise-wide experiments to prove the viability the evolving GIG's technical foundation. Lessons learned from these experiments are used to advance the GIG's ongoing development.

5 Establish a GIG compliance oversight program.

EW SE will enable the ASD(NII)/DoD CIO to enable Net-Centric operations and oversee the execution of GIG compliance management efforts to ensure interoperability and performance, support governance of the GIG evolution, and ensure compliance with the technical foundation. This will require engagement with key GIG programs throughout their acquisition cycles—within programs and portfolios as well as across portfolios and the enterprise.

The lessons learned from 2004's multinational tsunami response emphasize the critical need for information sharing with partners in non-warfighting settings. The GIG—with policies and guidance developed by EW SE— can help make reliable collaboration a reality and position the GIG as an effective resource that spans the government and the globe.

The Power of **Information** | Access
Share
Collaborate